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**A peculiar new *Catapyrenium* species  
(Lichenized Ascomycetes, Verrucariaceae)  
from Mexico**

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**A b s t r a c t :** *Catapyrenium dactylinum* is described as new from Mexico. It is outstanding in having erect, inflated, nodular to finger-like lobuli the apices of which bear innate pycnidia. These are of *Dermatocarpon*-type. The new species is the only representative of the genus that is known to have pycnidia.

**K e y W o r d s :** Lichenized Ascomycetes, Verrucariaceae, *Catapyrenium dactylinum* sp. nov.; mycoflora of Mexico.

**Introduction**

In the course of the Sonoran Desert Lichen Flora Project lead by Professor T.H.Nash in Tempe, Arizona, the author revised many collections of squamulose species of the family Verrucariaceae. Among the material there was a sample from Mexico that showed similarities with *Catapyrenium daedaleum*, but was outstanding in bearing isidia-like outgrowths and in having pycnidia.

The occurrence of pycnidia is especially interesting as they are lacking in all other species of *Catapyrenium* s.str. as well as in the closely related genus *Involucrocarpon* (BREUSS 1997) whereas they are to be found in all other genera formerly assigned to *Catapyrenium*. Two different pycnidial types can be distinguished within the Verrucariaceae. The *Dermatocarpon*-type pycnidium is a plurilocular type with several to many small cavities within paraplectenchymatous tissue; the conidiogeneous cells surrounding each cavity are of the same size and shape as the tissue cells. The *Staurothele*-type pycnidium consists of a single (though sometimes subdivided by folds) central cavity which is lined by a layer of flask-shaped conidiogeneous cells. The occurrence of two different pycnidial types gives evidence for the heterogeneity of *Catapyrenium* s.lat. which is supported by further anatomical differences (BREUSS 1997). The pycnidia of the new species are of *Dermatocarpon*-type; herewith *Catapyrenium* appears to be more closely related to *Placidium*, *Clavascidium* and *Heteroplacidium* than to *Anthracocarpon*, *Neocatapyrenium* and *Scleropyrenium*.

### The species

#### *Catapyrenium dactylinum* BREUSS, species nova

A speciebus aliis *Catapyrenii* lobulis dactyliformibus, ± inflatis differt. Pycnidia in apicibus lobulorum innata.

Type: Mexico, Chihuahua: Open N-facing hillside along a secondary dirt road with the valley of Arroyo Ancho, 5 km W of paved road to Creel. On mosses over acidic rock, 28°12'25''N, 107°31'55''W, elev. 2250 m, 23 July, 1994 T.H.Nash 37578 (ASU, holotype; LI, isotype).

Morphology (fig. 1): Thallus irregularly rosulate, up to 30 mm in diameter, of densely aggregated, depressed-convex or flattened, slightly undulate, 1.5 - 2.5 mm wide squamules, the outer ones somewhat enlarged and weakly concave. Upper surface of thallus brownish gray, dull, densely covered by a granular pruina. Squamules (especially the central ones) irregularly divided into erect, nodular or slightly elongated, inflated lobes or lobules up to 0.35 mm wide; surface of lobules less densely pruinose, their very tips often epruinose and brown. Lower surface of thallus brown in central parts, pale marginally, matt, without a rhizohypal weft; squamules attached by their elongated basal ends.

Thallus anatomy: Squamules 250-350 µm thick. Upper cortex weakly differentiated, of small, roundish-angular cells. Algal layer thin (30-50 µm thick), algal cells 5-8 µm in diameter. Medulla of irregularly intricated filamentous hyphae 2.5-3 µm in diameter, without spheric cells; medulla of dactyloid lobules more loosely filamentous to almost arachnoid. Lower cortex thin, of 1-3 layers of brownish, roundish-angular cells 8-12 µm in diameter.

Perithecia: subglobose, up to 250 µm broad; exciple colorless or yellowish; asci narrowly clavate, 50-55 x 12-16 µm; ascospores narrowly ellipsoidal, 14-17 x 5-6 µm.

Pycnidia: immersed in the apices of erect lobules; conidia shortly cylindrical, 3.5-4 x 1 µm.

*Catapyrenium dactylinum* is somewhat similar to *C. daedaleum* from which it differs by the formation of nodular or finger-like lobules with a loosely filamentous medulla, a cellular lower cortex and the lack of rhizohyphae. The function of the isidioid protuberances is not clear. Though they become easily detached, their role as reproductive propagules is doubtful so that *lobuli* seems to be the most appropriate term. A part of them bear pycnidia. The possession of pycnidia is the most remarkable feature of the new species as these structures are lacking in all other members of the genus *Catapyrenium*.

The species was found growing on mosses over acidic rock. It is known only from the type locality in Chihuahua.

### Zusammenfassung

*Catapyrenium dactylinum* aus Mexiko wird neu beschrieben. Die Art ist durch aufgerichtete, etwas aufgeblasene, knotenartige bis fingerförmige Lobuli gekennzeichnet, in deren Spitzen Pykniden vom *Dermatocarpon*-Typ eingesenkt sind. *Catapyrenium dactylinum* ist die einzige Art der Gattung, die Pykniden entwickelt.

### References

BREUSS O. (1997): Ein verfeinertes Gliederungskonzept für *Catapyrenium* (lichenisierte Ascomyceten, Verrucariaceae) mit einem Schlüssel für die bisher bekannten Arten. — Annalen des Naturhistorischen Museums Wien **98 B** Suppl. ("1996"): 35-50.

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Fig. 1: *Catapyrenium dactylinum*. Isotype.